



EOSDIS

NASA'S EARTH OBSERVING SYSTEM
DATA AND INFORMATION SYSTEM

Documentation Resources on the ESIP Wiki

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Terminology

Concept : General term for describing a documentation entity.

Dialect : A particular form of the documentation language that is specific to a community.

Recommendation: A set of concepts that a group believes is required for achieving a documentation goal.

Spiral: A set of concepts required to support a particular documentation need or use case.

Collection: A group of metadata records, commonly organized by data center, organization or project and often stored in a database or web accessible folder.

Documentation Connections

Browser window showing the wiki.esipfed.org page titled "Category:Documentation Connections".

The page includes a navigation sidebar on the left with links such as "Main Page", "Categories", "Recent changes", "Help", "Toolbox", "What links here", "Related changes", "Upload file", "Special pages", "Printable version", "Permanent link", and "Browse properties".

The main content area displays the "Category:Documentation Connections" page, which includes sections for "Introduction", "Preface", "Table of Contents", and "Subcategories".

Introduction [edit]

The ESIP Community supports a vast array of systems that are accessed and utilized by a diverse group of users. Historically, groups within the community have approached metadata differently in order to effectively describe their data. As a result, similar dialects have emerged to address specific user requirements. The multi-dialect approach described above hinders interoperability – as it results in different terminology being used to describe the same concepts. By clearly depicting fundamental documentation needs and concepts and mapping to them in the different dialects, confusion is minimized and interoperability is facilitated. Thus, demonstrating connections between dialects increases discoverability, accessibility, and reusability of data via consistent, compatible metadata.

This document describes the connections between fundamental concepts in dialects used throughout the ESIP Community – such that effective communication is maintained even when different metadata models are employed.

Preface [edit]

The following pages are intended to help understand connections between metadata dialects in order to implement complete and consistent metadata. For convenience, this reference is divided into 5 major sections, consisting of: Introductory Material, Documentation Recommendations, Metadata Implementation, Documentation Selection Scenarios, and the Appendixes. Each of these sections is further divided into subsections. For your reference, a full table of contents is provide below.

Table of Contents [edit]

- [Documentation Terminology](#)
- [Concepts Glossary](#)
- [Documentation Recommendations](#)
- [Metadata Dialects](#)
- [Metadata Implementation](#)
- [Documentation Selection Scenarios](#)

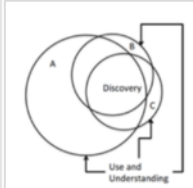
Subcategories

This category has only the following subcategory.

M

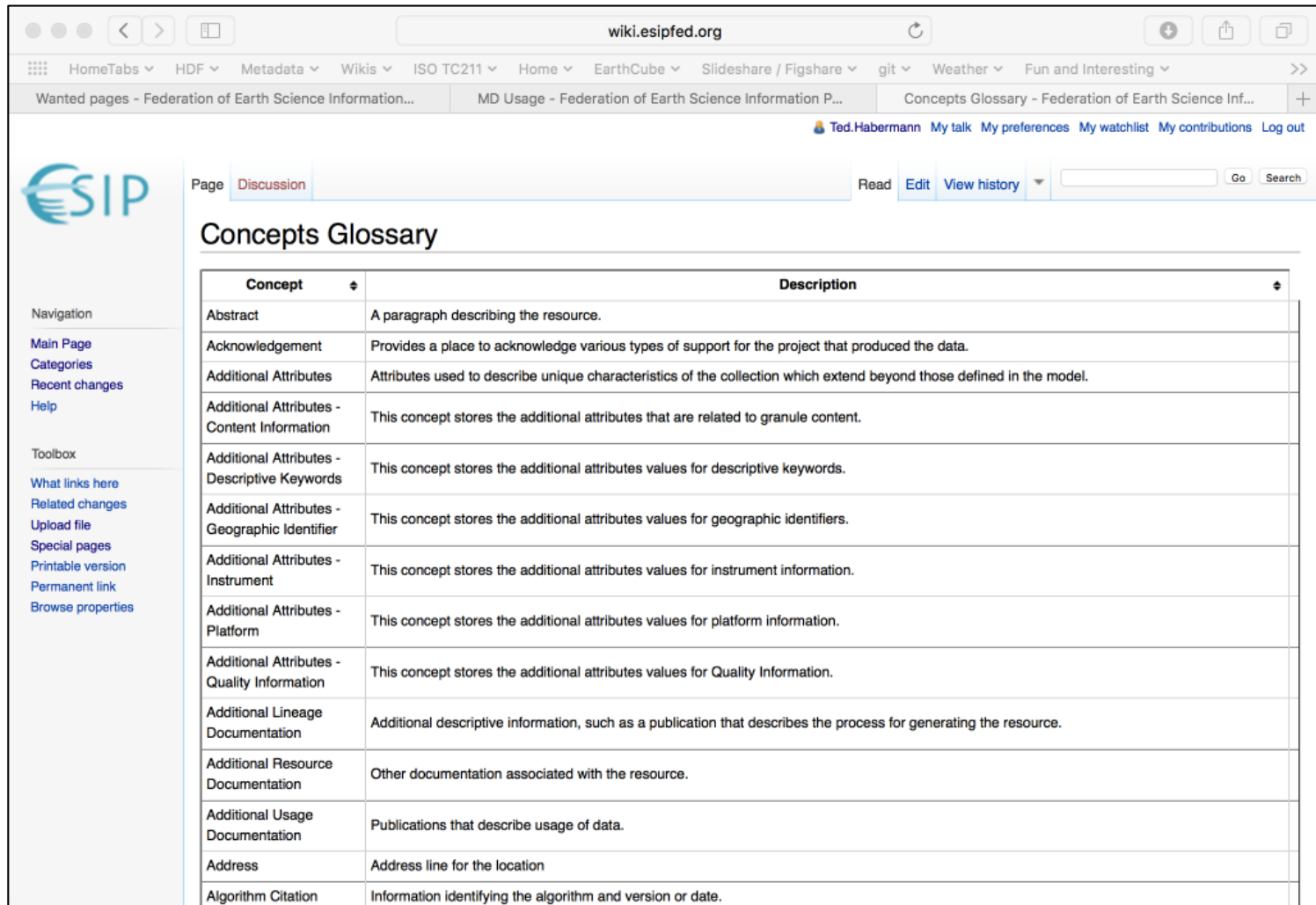
- [Metadata Implementation](#)

Diagram: Schematic diagram of conceptual overlaps between three metadata dialects (A, B, and C). Note: More overlap is expected for discovery than for use and understanding concepts.



http://wiki.esipfed.org/index.php/Category:Documentation_Connections

Concept Glossary

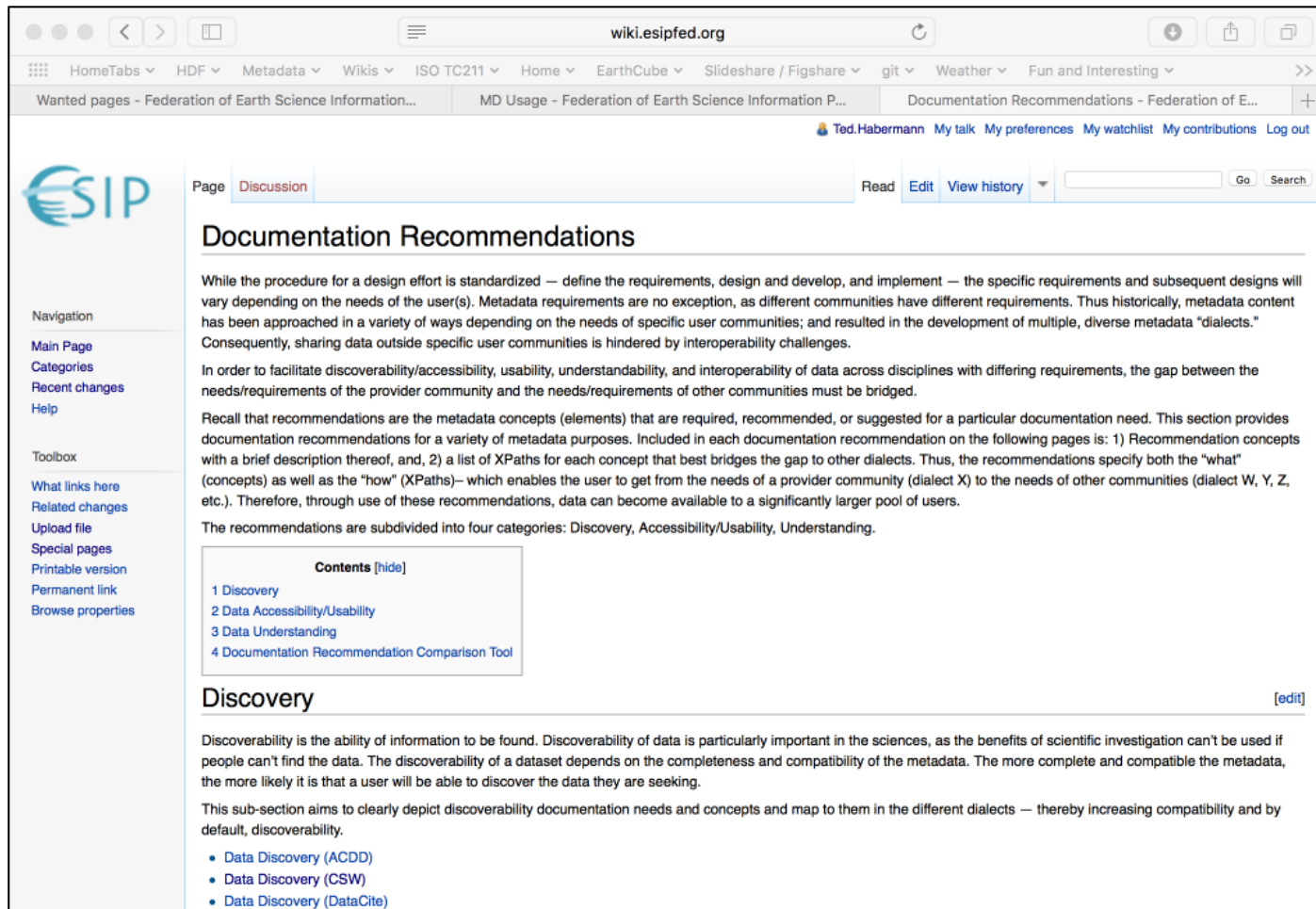


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Concepts Glossary

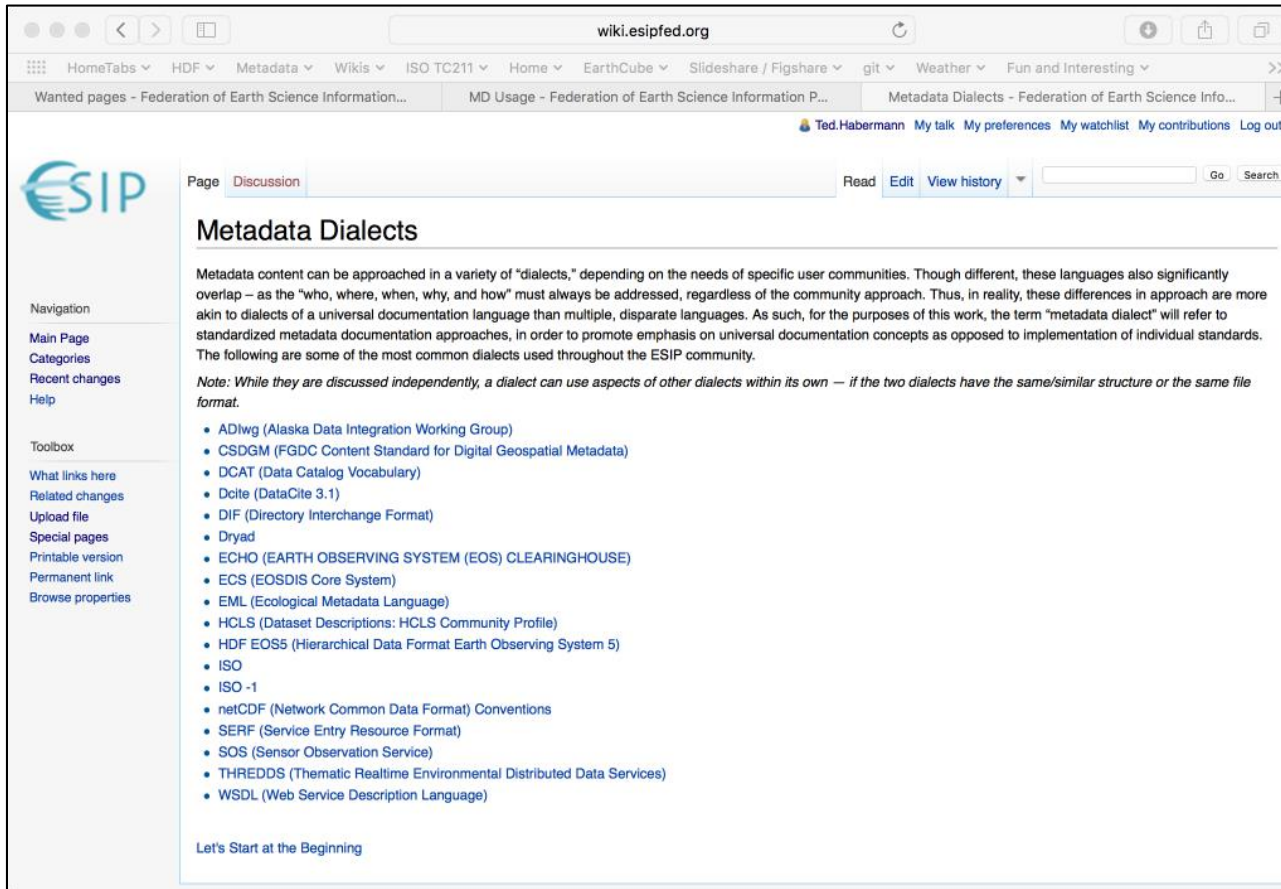
Concept	Description
Abstract	A paragraph describing the resource.
Acknowledgement	Provides a place to acknowledge various types of support for the project that produced the data.
Additional Attributes	Attributes used to describe unique characteristics of the collection which extend beyond those defined in the model.
Additional Attributes - Content Information	This concept stores the additional attributes that are related to granule content.
Additional Attributes - Descriptive Keywords	This concept stores the additional attributes values for descriptive keywords.
Additional Attributes - Geographic Identifier	This concept stores the additional attributes values for geographic identifiers.
Additional Attributes - Instrument	This concept stores the additional attributes values for instrument information.
Additional Attributes - Platform	This concept stores the additional attributes values for platform information.
Additional Attributes - Quality Information	This concept stores the additional attributes values for Quality Information.
Additional Lineage Documentation	Additional descriptive information, such as a publication that describes the process for generating the resource.
Additional Resource Documentation	Other documentation associated with the resource.
Additional Usage Documentation	Publications that describe usage of data.
Address	Address line for the location
Algorithm Citation	Information identifying the algorithm and version or date.

Recommendations



The screenshot shows a web browser window with the URL wiki.esipfed.org. The page title is "Documentation Recommendations". The left sidebar contains navigation links: "Main Page", "Categories", "Recent changes", "Help", "Toolbox", "What links here", "Related changes", "Upload file", "Special pages", "Printable version", "Permanent link", and "Browse properties". The main content area has a "Page" tab selected, with "Discussion" also visible. The "Documentation Recommendations" section begins with a paragraph: "While the procedure for a design effort is standardized — define the requirements, design and develop, and implement — the specific requirements and subsequent designs will vary depending on the needs of the user(s). Metadata requirements are no exception, as different communities have different requirements. Thus historically, metadata content has been approached in a variety of ways depending on the needs of specific user communities; and resulted in the development of multiple, diverse metadata 'dialects.' Consequently, sharing data outside specific user communities is hindered by interoperability challenges." This is followed by a paragraph: "In order to facilitate discoverability/accessibility, usability, understandability, and interoperability of data across disciplines with differing requirements, the gap between the needs/requirements of the provider community and the needs/requirements of other communities must be bridged." Then, a paragraph: "Recall that recommendations are the metadata concepts (elements) that are required, recommended, or suggested for a particular documentation need. This section provides documentation recommendations for a variety of metadata purposes. Included in each documentation recommendation on the following pages is: 1) Recommendation concepts with a brief description thereof, and, 2) a list of XPaths for each concept that best bridges the gap to other dialects. Thus, the recommendations specify both the 'what' (concepts) as well as the 'how' (XPaths)— which enables the user to get from the needs of a provider community (dialect X) to the needs of other communities (dialect W, Y, Z, etc.). Therefore, through use of these recommendations, data can become available to a significantly larger pool of users." A paragraph follows: "The recommendations are subdivided into four categories: Discovery, Accessibility/Usability, Understanding." Below this is a "Contents" section with a "[hide]" link, listing: "1 Discovery", "2 Data Accessibility/Usability", "3 Data Understanding", and "4 Documentation Recommendation Comparison Tool". The "Discovery" section is expanded, showing a paragraph: "Discoverability is the ability of information to be found. Discoverability of data is particularly important in the sciences, as the benefits of scientific investigation can't be used if people can't find the data. The discoverability of a dataset depends on the completeness and compatibility of the metadata. The more complete and compatible the metadata, the more likely it is that a user will be able to discover the data they are seeking." This is followed by a paragraph: "This sub-section aims to clearly depict discoverability documentation needs and concepts and map to them in the different dialects — thereby increasing compatibility and by default, discoverability." and a bulleted list: "• Data Discovery (ACDD)", "• Data Discovery (CSW)", and "• Data Discovery (DataCite)".

Dialects



The screenshot shows a web browser window displaying the 'Metadata Dialects' page on the wiki.esipfed.org website. The browser's address bar shows 'wiki.esipfed.org'. The page has a navigation bar at the top with various menu items like 'HomeTabs', 'HDF', 'Metadata', 'Wikis', 'ISO TC211', 'Home', 'EarthCube', 'Slideshare / Figshare', 'git', 'Weather', and 'Fun and Interesting'. Below the navigation bar, there's a user profile for 'Ted.Habermann' with links to 'My talk', 'My preferences', 'My watchlist', 'My contributions', and 'Log out'. The main content area is titled 'Metadata Dialects' and includes a paragraph explaining that metadata content can be approached in a variety of 'dialects' depending on the needs of specific user communities. It also includes a note about dialects and a list of common dialects used throughout the ESIP community. The left sidebar contains navigation links such as 'Main Page', 'Categories', 'Recent changes', 'Help', 'Toolbox', 'What links here', 'Related changes', 'Upload file', 'Special pages', 'Printable version', 'Permanent link', and 'Browse properties'.

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Metadata Dialects

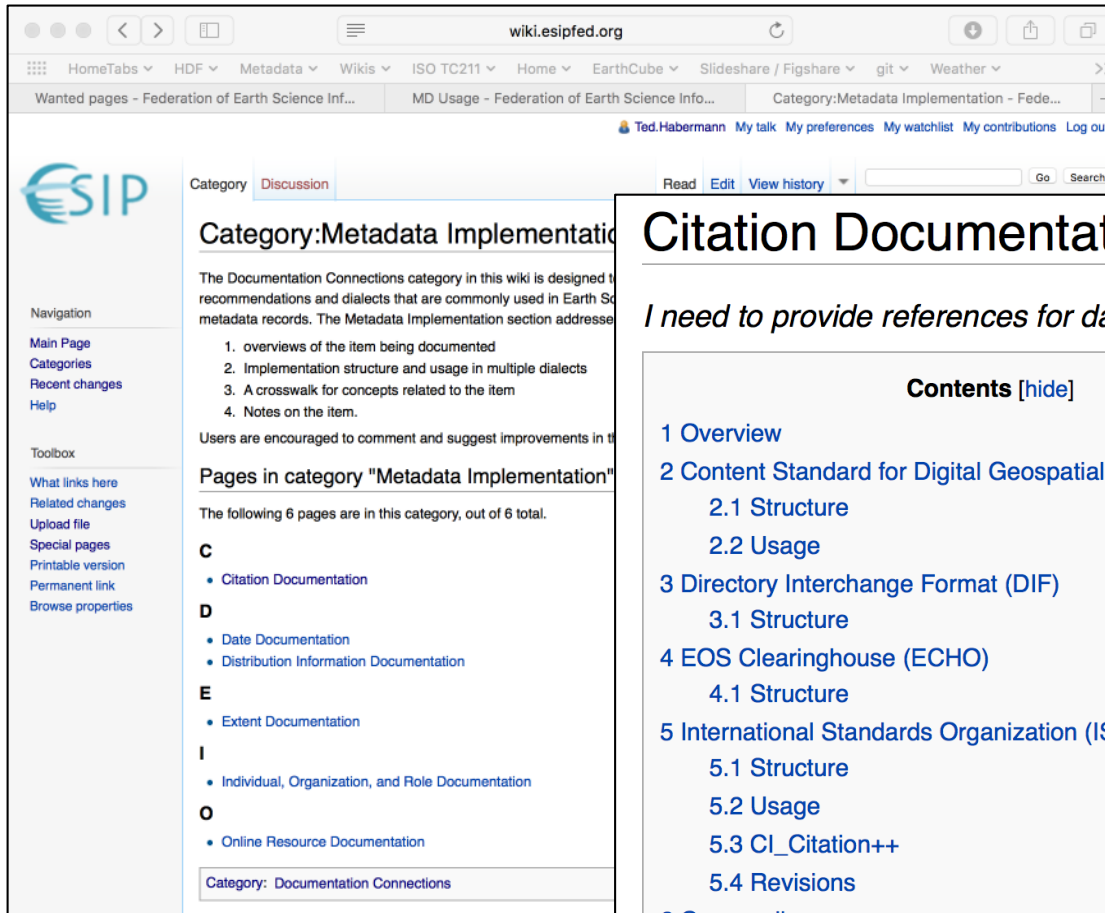
Metadata content can be approached in a variety of "dialects," depending on the needs of specific user communities. Though different, these languages also significantly overlap – as the "who, where, when, why, and how" must always be addressed, regardless of the community approach. Thus, in reality, these differences in approach are more akin to dialects of a universal documentation language than multiple, disparate languages. As such, for the purposes of this work, the term "metadata dialect" will refer to standardized metadata documentation approaches, in order to promote emphasis on universal documentation concepts as opposed to implementation of individual standards. The following are some of the most common dialects used throughout the ESIP community.

Note: While they are discussed independently, a dialect can use aspects of other dialects within its own — if the two dialects have the same/similar structure or the same file format.

- ADIwg (Alaska Data Integration Working Group)
- CSDGM (FGDC Content Standard for Digital Geospatial Metadata)
- DCAT (Data Catalog Vocabulary)
- Dcite (DataCite 3.1)
- DIF (Directory Interchange Format)
- Dryad
- ECHO (EARTH OBSERVING SYSTEM (EOS) CLEARINGHOUSE)
- ECS (EOSDIS Core System)
- EML (Ecological Metadata Language)
- HCLS (Dataset Descriptions: HCLS Community Profile)
- HDF EOS5 (Hierarchical Data Format Earth Observing System 5)
- ISO
- ISO -1
- netCDF (Network Common Data Format) Conventions
- SERF (Service Entry Resource Format)
- SOS (Sensor Observation Service)
- THREDDS (Thematic Realtime Environmental Distributed Data Services)
- WSDL (Web Service Description Language)

[Let's Start at the Beginning](#)

Guidance Pages



Category: [Discussion](#)

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Category:Metadata Implementation

The Documentation Connections category in this wiki is designed to provide recommendations and dialects that are commonly used in Earth Science metadata records. The Metadata Implementation section addresses:

1. overviews of the item being documented
2. Implementation structure and usage in multiple dialects
3. A crosswalk for concepts related to the item
4. Notes on the item.

Users are encouraged to comment and suggest improvements in the discussion page.

Pages in category "Metadata Implementation"

The following 6 pages are in this category, out of 6 total.

C

- [Citation Documentation](#)

D

- [Date Documentation](#)
- [Distribution Information Documentation](#)

E

- [Extent Documentation](#)

I

- [Individual, Organization, and Role Documentation](#)

O

- [Online Resource Documentation](#)

Category: [Documentation Connections](#)

Citation Documentation

I need to provide references for datasets and associated resources.

Contents [\[hide\]](#)

- [1 Overview](#)
- [2 Content Standard for Digital Geospatial Metadata \(CSDGM\)](#)
 - [2.1 Structure](#)
 - [2.2 Usage](#)
- [3 Directory Interchange Format \(DIF\)](#)
 - [3.1 Structure](#)
- [4 EOS Clearinghouse \(ECHO\)](#)
 - [4.1 Structure](#)
- [5 International Standards Organization \(ISO\)](#)
 - [5.1 Structure](#)
 - [5.2 Usage](#)
 - [5.3 CI_Citation++](#)
 - [5.4 Revisions](#)
- [6 Crosswalks](#)
- [7 Notes](#)
 - [7.1 CodeLists as Types](#)

ISO Metadata Explorer

The image displays two screenshots of the ISO Metadata Explorer website, which is hosted on wiki.esipfed.org.

Left Screenshot: MI Metadata

The page title is "MI Metadata". It describes a "Comprehensive explorer of ISO 19115 and 19115-2 metadata standards to more information and examples."

Elements Table:

	Element	Cardinality	Definition and Recommended Practice
1	metadataIdentifier	0..1	Code that uniquely identifies this metadata record. Recommended Practice: Identifier is usually the same as the metadata file - for example C00500. Two general approaches to ensuring these identifiers: 1. use a universal (UUID), to distinguish it from other identifiers; 2. include a namespace and a code that is unique in that namespace in the identifier. Example: gov.noaa.class:AERO100. gov.noaa.class is a namespace and code guaranteed to be unique in the namespace.
2	defaultLocale	0..*	Default language and characterSet metadata. Locale is mandatory when language is used in free text descriptions.
3	parentMetadata	0..1	Document a higher level metadata. Provide full citation to parent.
4	metadataScope	0..*	Scope of resource to which the metadata applies. Now includes an MD_ScopeCode at hierarchy level. Repeat if more than one applicable to this metadata description.
5	contact	1..*	Individual and/or organization responsible for metadata creation and maintenance. roleCode="pointOfContact". Provide such address, phone and email.
	dateStamp (choose one)		Date of last metadata update. High revisiting the metadata content and

Right Screenshot: CI Responsibility

The page title is "CI Responsibility". It describes "Information about the spatial and temporal coverage of the responsibility."

Elements Table:

	Element	Cardinality	Definition and Recommended Practice
1	role	1	Function performed by the responsible party. See list of definitions for best practices.
2	extent	0..*	Information about the spatial and temporal coverage of the responsibility. This is used when different people or organizations are responsible for different spatial or temporal sections of the resource, e.g. if the responsibility changes over time.
3	party	1..*	Information the person or organization that serves this responsibility.

Legend:

- yellow: mandatory
- green: conditional
- blue: optional

ISO Legend

Possible Parent Elements

- ISO People

Please contribute!

Category: ISO Explorer

http://wiki.esipfed.org/index.php/MI_Metadata

http://wiki.esipfed.org/index.php/CI_Responsibility

ISO Metadata Explorer

The screenshot shows the ISO Metadata Explorer web application. The browser address bar displays `wiki.esipfed.org`. The top navigation bar includes links for HomeTabs, HDF, Metadata, Wikis, ISO TC211, Home, EarthCube, Slideshow / Figshare, git, Weather, Fun and Interesting, Tracking, WSSSPE, XSL, and JSONLint. Below this, a secondary navigation bar shows links for Wanted pages, Federation of Earth Science Inform..., MD Usage, and Category:ISO Explorer. The main content area is titled "Category:ISO Explorer" and lists 158 pages in this category. The pages are organized into three columns: A, I cont., and M cont. The left sidebar contains navigation links such as Main Page, Categories, Recent changes, Help, and a Toolbox with links like What links here, Related changes, Upload file, Special pages, Printable version, Permanent link, and Browse properties.

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Category:ISO Explorer

The ISO Explorer Category

Pages in category "ISO Explorer"

The following 158 pages are in this category, out of 158 total.

A <ul style="list-style-type: none">ANameAngle	I cont. <ul style="list-style-type: none">ISO FAQISO Topic CategoriesTemplate:IsoOrderingFooter	M cont. <ul style="list-style-type: none">MemberNameMI AcquisitionInformationMI BandMI CoverageDescriptionMI EventMI GCPMI GPCCollectionMI GeorectifiedMI GeoreferenceableMI ImageDescriptionMI InstrumentMI MetadataMI ObjectiveMI OperationMI PlanMI PlatformMI PlatformPass
B <ul style="list-style-type: none">BaseUnitBoolean	L <ul style="list-style-type: none">LE AlgorithmLE NominalResolutionLE ProcessingLE ProcessStepLE ProcessStepReportLE SourceLengthLI LineageLI ProcessStepLI SourceLineStringLocalName	
C <ul style="list-style-type: none">CharacterStringCI AddressCI CitationCI Citation for MD DataIdentificationCI ContactCI DateCI OnlineResourceCI PartyCI ResponsibilityCI ResponsibleParty		

Acknowledgements



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Raytheon

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